trends in

CELL BIOLOGY

3

3 years of publishing excellence
1991–1994

COLLECTED ARTICLES FROM TRENDS IN CELL BIOLOGY JULY 1991–JUNE 1994

Antigen processing and presentation

Luc Teyton and Per A. Peterson (1992) Invariant chain – a regulator of antigen presentation 2, 52–56

Robert DeMars and Thomas Spies (1992) New genes in the MHC that encode proteins for antigen processing 2, 81–86

Frances M. Brodsky (1992) Antigen processing and presentation: close encounters in the endocytic pathway 2, 109–115

Grada M. van Bleek and Stanley G. Nathenson (1992) Presentation of antigenic peptides by MHC class I molecules 2, 202–207

Antisense oligonucleotides

Saghir Akhtar and R. L. Juliano (1992) Cellular uptake and intracellular fate of antisense oligonucleotides 2, 139–144

Apoptosis

Gwyn T. Williams, Christopher A. Smith, Nicola J. McCarthy and Eileen A. Grimes (1992) Apoptosis: final control point in cell biology 2, 263–267

Seamus J. Martin (1993) Apoptosis: suicide, execution or murder? 3, 141–144

Manuel C. Peitsch, Hans Georg Mannherz and Jürg Tschopp (1994) The apoptosis endonucleases: cleaning up after cell death? 4, 37–41

Gerard I. Evan (1994) Old cells never die, they just apoptose 4, 191–192

Bacterial toxins

Hugh R. B. Pelham, Lynne M. Roberts and J. Michael Lord (1992) Toxin entry: how reversible is the secretory pathway? 2, 183–185

Heiner Niemann, Juan Blasi and Reinhard Jahn (1994) Clostridial neurotoxins: new tools for dissecting exocytosis 4, 179–185

Calcium

Stephen Bolsover and R. Angus Silver (1991) Artifacts in calcium measurement: recognition and remedies 1, 71–74

A. Louise Upton and Stephen E. Moss (1992) Calcium-binding proteins: beyond hands and loops 2, 175–176 (MR)

Jean Gruenberg and Neil Emans (1993) Annexins in membrane traffic 3, 224–227

Frederick R. Maxfield (1993) Regulation of leukocyte locomotion by Ca^{2+} 3, 386–391

Kimberly Burns, Eric A. Atkinson, R. Chris Bleackley and Marek Michalak (1994) Calreticulin: from Ca^{2+} binding to control of gene expression 4, 152–154

Caveolae

Richard G. W. Anderson (1993) Potocytosis of small molecules and ions by caveolae 3, 69–71

Bo van Deurs, Pernille Kaae Holm, Kirsten Sandvig and Steen H. Hansen (1993) Are caveolae involved in clathrin-independent endocytosis? 3, 249–251

Cell adhesion

Vito Quaranta and Jonathan C. R. Jones (1991) The internal affairs of an integrin 1, 2–4

David Schubert (1992) Collaborative interactions between growth factors and the extracellular matrix 2, 63–65

Frans Van Roy and Marc Mareel (1992) Tumour invasion: effects of cell adhesion and motility 2, 163–169

Martin Alexander Schwartz (1992) Transmembrane signalling by integrins 2, 304–307

Lora Hedrick, Kathleen R. Cho and Bert Vogelstein (1993) Cell adhesion molecules as tumour suppressors 3, 36–39

Michael D. Schaller and J. Thomas Parsons (1993) Focal adhesion kinase: an integrin-linked protein tyrosine kinase 3, 258–261

James L. Madara (1994) Migration of neutrophils through epithelial monolayers 4, 4–7

Glen R. Nemerow, David A. Cheresh and Thomas J. Wickham (1994) Adenovirus entry into host cells: a role for α_v integrins 4, 52–55

Janice Williams and Nelly Kieffer (1994) Adhesion molecules in cellular interactions 4, 102–104 (MR)

Michael J. Williams, Paul E. Hughes, Timothy E. O'Toole and Mark H. Ginsberg (1994) The inner world of cell adhesion: integrin cytoplasmic domains 4, 109–112

Cell cycle

Jonathon Pines and Tony Hunter (1991) Cyclin-dependent kinases: a new cell cycle motif? 1, 117–121

Daniel J. Lew and Steven I. Reed (1992) A proliferation of cyclins 2, 77–80

Patrick H. O'Farrell (1992) Cell cycle control: many ways to skin a cat 2, 159–162

Iain Hagan and Takashi Toda (1992) A new axis for cell division 2, 245–246 (MR)

Michel Roberge (1992) Checkpoint controls that couple mitosis to completion of DNA replication 2, 277–281

Leland H. Johnston (1992) Cell cycle control of gene expression in yeast 2, 353–357

Kristian Helin and Ed Harlow (1993) The retinoblastoma protein as a transcriptional repressor 3, 43–46

Varda Rotter, Orit Foord and Nir Navot (1993) In search of the functions of normal p53 protein 3, 46–49

Tony Kouzarides (1993) Transcriptional regulation by the retinoblastoma protein 3, 211–213

Giulio Draetta (1993) cdc2 activation: the interplay of cyclin binding and Thr161 phosphorylation 3, 287–289

Erich A. Nigg (1993) Cellular substrates of $p34^{cdc2}$ and its companion cyclin-dependent kinases 3, 296–301

William S. Saunders (1993) Mitotic spindle pole separation 3, 432–436

Charles J. Sherr (1994) The ins and outs of *RB*: coupling gene expression to the cell cycle clock 4, 15–18

Alan R. Lehmann and Antony M. Carr (1994) DNA damage, repair and the cell cycle 4, 24–26 (MR)

Rolf Bernander (1994) Universal cell cycle regulation? 4, 76–79

Christian Fankhauser and Viesturs Simanis (1994) Cold fission: splitting the *pombe* cell at room temperature 4, 96–101

Bik-Kwoon Tye (1994) The MCM2-3-5 proteins: are they replication licensing factors? 4, 160–166

William G. Dunphy (1994) The decision to enter mitosis 4, 202–207

Cell junctions

Cora-Ann Schoenenberger and Karl S. Matlin (1991) Cell polarity and epithelial oncogenesis 1, 87–92

W. Howard Evans (1994) Hiroshima welcomes gap junction communicants 4, 26–29 (MR)

Cell motility
Julie A. Theriot and Timothy J. Mitchison (1992) The nucleation–release model of actin filament dynamics in cell motility 2, 219–222
Dennis Bray (1993) Towards the molecular physiology of cell movements 3, 363–365
Juliet Lee, Akira Ishihara and Ken Jacobson (1993) How do cells move along surfaces? 3, 366–370
John Condeelis (1993) Understanding the cortex of crawling cells: insights from *Dictyostelium* 3, 371–376
Manfred Schliwa and Bernd Höner (1993) Microtubules, centrosomes and intermediate filaments in directed cell movement 3, 377–380
Laura M. Machesky and Thomas D. Pollard (1993) Profilin as a potential mediator of membrane–cytoskeleton communication 3, 381–385
Frederick R. Maxfield (1993) Regulation of leukocyte locomotion by Ca^{2+} 3, 386–391
Marianne Bronner-Fraser (1993) Neural crest cell migration in the developing embryo 3, 392–397
David J. Asai and Charles J. Brokaw (1993) Dynein heavy chain isoforms and axonemal motility 3, 398–402
George B. Witman (1993) *Chlamydomonas* phototaxis 3, 403–408
Peter Satir, Kurt Barkalow and Toshikazu Hamasaki (1993) The control of ciliary beat frequency 3, 409–412
James L. Madara (1994) Migration of neutrophils through epithelial monolayers 4, 4–7

Cell polarity
Cora-Ann Schoenenberger and Karl S. Matlin (1991) Cell polarity and epithelial oncogenesis 1, 87–92
Kevin Madden, Christine Costigan and Michael Snyder (1992) Cell polarity and morphogenesis in *Saccharomyces cerevisiae* 2, 22–29
Marian R. Neutra and Jean-Pierre Kraehenbuhl (1992) Transepithelial transport and mucosal defence I: the role of M cells 2, 134–138
Jean-Pierre Kraehenbuhl and Marian R. Neutra (1992) Transepithelial transport and mucosal defence II: secretion of IgA 2, 170–174
Deborah A. Brown (1992) Interactions between GPI-anchored proteins and membrane lipids 2, 338–342
Steve E. Pfeiffer, Art E. Warrington and Rashmi Bansal (1993) The oligodendrocyte and its many cellular processes 3, 191–197
Howard Riezman (1993) Three clathrin-dependent budding steps and cell polarity 3, 330–332

Cell wall
Sarah E. Wyatt and Nicholas C. Carpita (1993) The plant cytoskeleton–cell-wall continuum 3, 413–417
Hans de Nobel and Peter N. Lipke (1994) Is there a role for GPIs in yeast cell-wall assembly? 4, 42–45

Centromere
Bill R. Brinkley, Ilia Ouspenski and Raymond P. Zinkowski (1992) Structure and molecular organization of the centromere–kinetochore complex 2, 15–21

Chloroplasts
Steven M. Theg and Sidney Varian Scott (1993) Protein import into chloroplasts 3, 186–190

Chromatin
Alan P. Wolffe (1991) Developmental regulation of chromatin structure and function 1, 61–66
Lisa L. Sandell and Virginia A. Zakian (1992) Telomeric position effect in yeast 2, 10–14
Jacques Dubochet (1993) Twisting in a crowd 3, 1–3
Eric Gilson, Thierry Laroche and Susan M. Gasser (1993) Telomeres and the functional architecture of the nucleus 3, 128–134

Cytoskeleton
John A. Hammer III (1991) Novel myosins 1, 50–56
Christine A. Collins (1991) Dynamin: a novel microtubule-associated GTPase 1, 57–60
Richard Vallee (1991) Cytoplasmic dynein: advances in microtubule-based motility 1, 25–29
Lawrence S. B. Goldstein (1991) The kinesin superfamily: tails of functional redundancy 1, 93–98
Kenneth E. Sawin and Jonathan M. Scholey (1991) Motor proteins in cell division 1, 122–129
Berl R. Oakley (1992) γ-Tubulin: the microtubule organizer? 2, 1–5
Bill R. Brinkley, Ilia Ouspenski and Raymond P. Zinkowski (1992) Structure and molecular organization of the centromere–kinetochore complex 2, 15–21
Peter Michaely and Vann Bennett (1992) The ANK repeat: a ubiquitous motif involved in macromolecular recognition 2, 127–129
Frans Van Roy and Marc Mareel (1992) Tumour invasion: effects of cell adhesion and motility 2, 163–169
Robert J. Bloch and David W. Pumplin (1992) A model of spectrin as a concertina in the erythrocyte membrane skeleton 2, 186–189
Julie A. Theriot and Timothy J. Mitchison (1992) The nucleation–release model of actin filament dynamics in cell motility 2, 219–222
Gloria Lee and Roland Brandt (1992) Microtubule-bundling studies revisited: is there a role for MAPs? 2, 286–289
Omar Skalli, Ying-Hao Chou and Robert D. Goldman (1992) Intermediate filaments: not so tough after all 2, 308–312
Helen Epstein and Jonathan M. Scholey (1992) Kinesins in the spindle: an update 2, 315–317
Isabelle Rey and Alan Hall (1993) Tumour suppressors and the regulation of GTP-binding protein activity 3, 39–42
David W. Pumplin and Robert J. Bloch (1993) The membrane skeleton 3, 113–117
Astrid Kalt and Manfred Schliwa (1993) Molecular components of the centrosome 3, 118–128
Manfred Schliwa and Bernd Höner (1993) Microtubules, centrosomes and intermediate filaments in directed cell movement 3, 377–380
David J. Asai and Charles J. Brokaw (1993) Dynein heavy chain isoforms and axonemal motility 3, 398–402
Sarah E. Wyatt and Nicholas C. Carpita (1993) The plant cytoskeleton–cell-wall continuum 3, 413–417
William S. Saunders (1993) Mitotic spindle pole separation 3, 432–436
Derek J. Blake, Jonathon M. Tinsley and Kay E. Davies (1994) The emerging family of dystrophin-related proteins 4, 19–23
Robert M. Evans (1994) Intermediate filaments and lipoprotein cholesterol 4, 149–151
Alexander E. Kabakov and Vladimir L. Gabai (1994) Heat-shock proteins maintain the viability of ATP-deprived cells: what is the mechanism? 4, 193–196

Development
Peter M. Hecht and Kathryn V. Anderson (1992) Extracellular proteases and embryonic pattern formation 2, 197–201
Joseph Frankel (1992) Positional information in cells and organisms 2, 256–260
Herbert Y. Lin and Harvey F. Lodish (1993) Receptors for the TGF-β superfamily: multiple polypeptides and serine/threonine kinases 3, 14–19
Helmut Krämer (1993) Patrilocal cell–cell interactions: sevenless captures its bride 3, 103–105

Marianne Bronner-Fraser (1993) Neural crest cell migration in the developing embryo 3, 392–397
Susann M. Brady-Kalnay and Nicholas K. Tonks (1994) Protein tyrosine phosphatases: from structure to function 4, 73–76
Christian Sardet, Alex McDougall and Evelyn Houliston (1994) Cytoplasmic domains in eggs 4, 166–172

Disease
Jane F. Amara, Seng H. Cheng and Alan E. Smith (1992) Intracellular protein trafficking defects in human disease 2, 145–149
Charles Weissmann (1994) Molecular biology of prion diseases 4, 10–14
Derek J. Blake, Jonathon M. Tinsley and Kay E. Davies (1994) The emerging family of dystrophin-related proteins 4, 19–23
Heiner Niemann, Juan Blasi and Reinhard Jahn (1994) Clostridial neurotoxins: new tools for dissecting exocytosis 4, 179–185
Jorge E. Galán (1994) *Salmonella* entry into mammalian cells: different yet converging signal transduction pathways? 4, 196–199

DNA repair
Michel Roberge (1992) Checkpoint controls that couple mitosis to completion of DNA replication 2, 277–281
Alan R. Lehmann and Antony M. Carr (1994) DNA damage, repair and the cell cycle 4, 24–26 (MR)

DNA replication
Erik Boye (1991) A turnstile for initiation of DNA replication 1, 107–109
Margarete M. S. Heck (1991) Probing replication origins with a fork 1, 67–70
Merl F. Hoekstra (1992) Are casein kinases the assistant coaches for DNA metabolism? 2, 153–155
John F. X. Diffley (1992) Early events in eukaryotic DNA replication 2, 298–303
Barbara E. Funnell (1993) Participation of the bacterial membrane in DNA replication and chromosome partition 3, 20–25
Melvin L. DePamphilis (1993) How transcription factors regulate origins of DNA replication in eukaryotic cells 3, 161–167
Pavel Hozák and Peter R. Cook (1994) Replication factories 4, 48–52
Bik-Kwoon Tye (1994) The MCM2-3-5 proteins: are they replication licensing factors? 4, 160–166

Endocytosis
Gareth Griffiths and Jean Gruenberg (1991) The arguments for pre-existing early and late endosomes 1, 5–9
Robert F. Murphy (1991) Maturation models for endosome and lysosome biogenesis 1, 77–82
David Vaux (1992) The structure of an endocytosis signal 2, 189–192
Margaret S. Robinson (1992) Adaptins 2, 293–297
Helmut Krämer (1993) Patrilocal cell–cell interactions: sevenless captures its bride 3, 103–105
Sandra L. Schmid (1993) Coated-vesicle formation *in vitro*: conflicting results using different assays 3, 145–148
Richard G. W. Anderson (1993) Dissecting clathrin-coated pits 3, 177–179
Bo van Deurs, Pernille Kaae Holm, Kirsten Sandvig and Steen H. Hansen (1993) Are caveolae involved in clathrin-independent endocytosis? 3, 249–251
Howard Riezman (1993) Yeast endocytosis 3, 273–277
Clare Futter and Mark Marsh (1993) Endocytosis and pasta 3, 316–318 (MR)

Flagella and cilia
Karl A. Johnson and Joel L. Rosenbaum (1991) Basal bodies and DNA 1, 145–149
Karl A. Johnson and Joel L. Rosenbaum (1993) Flagellar regeneration in *Chlamydomonas*: a model system for studying organelle assembly 3, 156–160
Jean-Pierre Mignot, Guy Brugerolle, Pierre Didier and Michel Bornens (1993) Basal-body-associated macromolecules: a continuing debate 3, 220–223
David J. Asai and Charles J. Brokaw (1993) Dynein heavy chain isoforms and axonemal motility 3, 398–402
George B. Witman (1993) *Chlamydomonas* phototaxis 3, 403–408

Growth factors
David Schubert (1992) Collaborative interactions between growth factors and the extracellular matrix 2, 63–66
Herbert Y. Lin and Harvey F. Lodish (1993) Receptors for the TGF-β superfamily: multiple polypeptides and serine/threonine kinases 3, 14–19
David J. Glass and George D. Yancopoulos (1993) The neurotrophins and their receptors 3, 262–267
Joan Massagué, Liliana Attisano and Jeffrey L. Wrana (1994) The TGF-β family and its composite receptors 4, 172–178

GTPases
Paul Melançon, Alex Franzusoff and Kathryn E. Howell (1991) Vesicle budding: insights from cell-free assays 1, 165–171
Suzanne R. Pfeffer (1992) GTP-binding proteins in intracellular transport 2, 41–46
Francis A. Barr, Anja Leyte and Wieland B. Huttner (1992) Trimeric G proteins and vesicle formation 2, 91–94
Tony Magee and Chris Newman (1992) The role of lipid anchors for small G protein in membrane trafficking 2, 318–323
Elizabeth S. Sztul, Paul Melançon and Kathryn E. Howell (1992) Targeting and fusion in vesicular transport 2, 381–386
Isabelle Rey and Alan Hall (1993) Tumour suppressors and the regulation of GTP-binding protein activity 3, 39–42
Jorge Iñiguez-Lluhi, Christiane Kleuss and Alfred G. Gilman (1993) The importance of G protein βγ subunits 3, 230–235
Peter Staeheli, Fernando Pitossi and Jovan Pavlovic (1993) Mx proteins: GTPases with antiviral activity 3, 268–272

Heat-shock proteins
Ken C. Holmes, Chris Sander and Alfonso Valencia (1993) A new ATP-binding fold in actin, hexokinase and Hsc70 3, 53–59
Alexander E. Kabakov and Vladimir L. Gabai (1994) Heat-shock proteins maintain the viability of ATP-deprived cells: what is the mechanism? 4, 193–196

Ion channels
Jonathan Barasch and Qais Al-Awqati (1992) Chloride channels, Golgi pH and cystic fibrosis 2, 35–37
Kevin K.W. Wang, Antonio Villalobo and Basil D. Roufogalis (1992) The plasma membrane calcium pump: a multiregulated transporter 2, 46–52

Lipid biogenesis
Gerrit van Meer and Koert N. J. Burger (1992) Sphingolipid trafficking – sorted out? 2, 332–337
Robert M. Evans (1994) Intermediate filaments and lipoprotein cholesterol 4, 149–151

Lipid messengers
Richard Kolesnick (1992) Ceramide: a novel second messenger 2, 232–235
Wouter H. Moolenaar (1994) LPA: a novel lipid mediator with diverse biological actions 4, 213–218
Mary F. Roberts (1994) First thoughts on lipid second messengers 4, 219–223 (MR)

Membrane biogenesis
Zach W. Hall (1992) Recognition domains in assembly of oligomeric membrane proteins 2, 66–68
Ari Helenius, Thorsten Marquardt and Ineke Braakman (1992) The endoplasmic reticulum as a protein-folding compartment 2, 227–231
Françoise G. van der Goot, Jeremy H. Lakey and Franc Pattus (1992) The molten globule intermediate for protein insertion or translocation through membranes 2, 343–348
Ulrike Kutay, Enno Hartmann and Tom A. Rapoport (1993) A class of membrane proteins with a C-terminal anchor 3, 72–75

Membrane domains
Michael Edidin (1992) Patches, posts and fences: proteins and plasma membrane domains 2, 376–380
Richard J. Cherry (1992) Keeping track of cell surface receptors 2, 242–244

Membrane fusion
Judith M. White (1993) Merging minds on membrane merger 3, 99–101 (MR)
Riccardo Fesce, Fabio Grohovaz, Flavia Valtorta and Jacopo Meldolesi (1994) Neurotransmitter release: fusion or 'kiss-and-run'? 4, 1–4

Membrane traffic
Rainer Duden, Viki Allan and Thomas Kreis (1991) Involvement of β-COP in membrane traffic through the Golgi complex 1, 14–19
Ann Cleves, Todd McGee and Vytas Bankaitis (1991) Phospholipid transfer proteins: a biological debut 1, 30–34
Gabriele Seethaler and Wieland Huttner (1991) Secretory protein sorting, processing and granule biogenesis 1, 35–36 (MR)
Carolyn E. Machamer (1991) Golgi retention signals: do membranes hold the key? 1, 141–144
Paul Melançon, Alex Franzusoff and Kathryn E. Howell (1991) Vesicle budding: insights from cell-free assays 1, 165–171
Jonathan Barasch and Qais Al-Awqati (1992) Chloride channels, Golgi pH and cystic fibrosis 2, 35–37
Suzanne R. Pfeffer (1992) GTP-binding proteins in intracellular transport 2, 41–45
Francis A. Barr, Anja Leyte and Wieland B. Huttner (1992) Trimeric G proteins and vesicle formation 2, 91–94
Jane F. Amara, Seng H. Cheng and Alan E. Smith (1992) Intracellular protein trafficking defects in human disease 2, 145–149
Hugh R. B. Pelham, Lynne M. Roberts and J. Michael Lord (1992) Toxin entry: how reversible is the secretory pathway? 2, 183–185
Margaret S. Robinson (1992) Adaptins 2, 293–297
Tony Magee and Chris Newman (1992) The role of lipid anchors for small G proteins in membrane trafficking 2, 318–323
Peter Avran and David Castle (1992) Protein sorting and secretion granule formation in regulated secretory cells 2, 327–331
Gerrit van Meer and Koert N. J. Burger (1992) Sphingolipid trafficking – sorted out? 2, 332–337
Deborah A. Brown (1992) Interactions between GPI-anchored proteins and membrane lipids 2, 338–342
Paul K. Herman, Jeffrey H. Stack and Scott D. Emr (1992) An essential role for a protein and lipid kinase complex in secretory protein sorting 2, 363–368
Elizabeth S. Sztul, Paul Melançon and Kathryn E. Howell (1992) Targeting and fusion in vesicular transport 2, 381–386
Richard G. W. Anderson (1993) Potocytosis of small molecules and ions by caveolae 3, 69–71
Jennifer Lippincott-Schwartz (1993) Bidirectional membrane traffic between the endoplasmic reticulum and Golgi apparatus 3, 81–88
Gabriele Seethaler and Hans-Hermann Gerdes (1993) The ins and outs of the secretory pathway 3, 168–170 (MR)
Gareth Griffiths, Robert G. Parton, John Lucocq, Bo van Deurs, Dennis Brown, Jan W. Slot and Hans J. Geuze (1993) The immunofluorescent era of membrane traffic 3, 214–219
Jean Gruenberg and Neil Emans (1993) Annexins in membrane traffic 3, 224–227
Keith K. Stanley and Kathryn E. Howell (1993) TGN38/41: a molecule on the move 3, 252–255
Alberto Luini and Maria Antonietta De Matteis (1993) Receptor-mediated regulation of constitutive secretion 3, 290–292
Howard Riezman (1993) Three clathrin-dependent budding steps and cell polarity 3, 330–332
David E. James, Robert C. Piper and Jan W. Slot (1994) Insulin stimulation of Glut-4 translocation: a model for regulated recycling 4, 120–126

Microscopy
Jonathan P. Bacon, Cytano Gonzalez and Christopher J. Hutchison (1991) Applications of confocal laser scanning microscopy 1, 172–175
John F. Bertram and Victor Nurcome (1992) Counting cells with the new stereology 2, 177–180
Scot C. Kuo and Michael P. Sheetz (1992) Optical tweezers in cell biology 2, 116–118
Jan H. Hoh and Paul K. Hansma (1992) Atomic force microscopy for high-resolution imaging in cell biology 2, 208–213
Richard J. Cherry (1992) Keeping track of cell surface receptors 2, 242–244
Terence D. Allen and Martin W. Goldberg (1993) IHigh-resolution SEM in cell biology 3, 205–208
Gareth Griffiths, Robert G. Parton, John Lucocq, Bo van Deurs, Dennis Brown, Jan W. Slot and Hans J. Geuze (1993) The immunofluorescent era of membrane traffic 3, 214–219
Roger Y. Tsien, Brian J. Bacskai and Stephen R. Adams (1993) FRET for studying intracellular signalling 3, 242–245
John Lucocq (1993) Unbiased 3-D quantitation of ultrastructure in cell biology 3, 354–358

Mitochondria
Benjamin Glick, Clemens Wachter and Gottfried Schatz (1991) Protein import into mitochondria: two systems acting in tandem? 1, 99–103
Robert O. Poyton, David M. J. Duhl and George H. D. Clarkson (1992) Protein export from the mitochondrial matrix 2, 369–375
Rosemary A. Stuart, Roland Lill and Walter Neupert (1993) Sorting out mitochondrial proteins 3, 135–137 (MR)

Molecular motors
John A. Hammer III (1991) Novel myosins 1, 50–56

Christine A. Collins (1991) Dynamin: a novel microtubule-associated GTPase 1, 57–60
Richard Vallee (1991) Cytoplasmic dynein: advances in microtubule-based motility 1, 25–29
Lawrence S. B. Goldstein (1991) The kinesin superfamily: tails of functional redundancy 1, 93–98
Kenneth E. Sawin and Jonathan M. Scholey (1991) Motor proteins in cell division 1, 122–129
Helen Epstein and Jonathan M. Scholey (1992) Kinesins in the spindle: an update 2, 315–317
David J. Asai and Charles J. Brokaw (1993) Dynein heavy chain isoforms and axonemal motility 3, 398–402
William S. Saunders (1993) Mitotic spindle pole separation 3, 432–437

Nuclear structure

Serafín Piñol-Roma and Gideon Dreyfuss (1993) hnRNP proteins: localization and transport between the nucleus and the cytoplasm 3, 151–155
Angus I. Lamond and Maria Carmo-Fonseca (1993) The coiled body 3, 198–204
Ulrich Scheer, Marc Thiry and Guy Goessens (1993) Structure, function and assembly of the nucleolus 3, 236–241
Yigong Xing and Jeanne Bentley Lawrence (1993) Nuclear RNA tracks: structural basis for transcription and splicing? 3, 346–353
Joseph Kramer, Zuzana Zachar and Paul M. Bingham (1994) Nuclear pre-mRNA metabolism: channels and tracks 4, 35–37
Stanislav Fakan (1994) Perichromatin fibrils are *in situ* forms of nascent transcripts 4, 86–90
Larry Gerace and Roland Foisner (1994) Integral membrane proteins and dynamic organization of the nuclear envelope 4, 127–131

Nuclear transport

David Goldfarb and Neil Michaud (1991) Pathways for the nuclear transport of proteins and RNAs 1, 20–24
M. Lienhard Schmitz, Thomas Henkel and Patrick A. Baeuerle (1991) Proteins controlling the nuclear uptake of NF-κB, REL and dorsal 1, 130–137
Lili Yamasaki and Robert E. Lanford (1992) Nuclear transport: a guide to import receptors 2, 123–126
Serafín Piñol-Roma and Gideon Dreyfuss (1993) hnRNP proteins: localization and transport between the nucleus and the cytoplasm 3, 151–155
Philip L. Paine (1993) Nuclear protein accumulation by facilitated transport and intranuclear binding 3, 325–329

Oligodendrocytes

Steve E. Pfeiffer, Art E. Warrington and Rashmi Bansal (1993) The oligodendrocyte and its many cellular processes 3, 191–197

Oncogenesis

Cora-Ann Schoenenberger and Karl S. Matlin (1991) Cell polarity and epithelial oncogenesis 1, 87–92
Frans Van Roy and Marc Mareel (1992) Tumour invasion: effects of cell adhesion and motility 2, 163–169
Sally J. Leevers and Christopher J. Marshall (1992) MAP kinase regulation – the oncogene connection 2, 283–285
Peter J. Bryant (1993) Towards the cellular functions of tumour suppressors – an introduction 3, 31–35
Lora Hedrick, Kathleen R. Cho and Bert Vogelstein (1993) Cell adhesion molecules as tumour suppressors 3, 36–39
Isabelle Rey and Alan Hall (1993) Tumour suppressors and the regulation of GTP-binding protein activity 3, 39–42
Kristian Helin and Ed Harlow (1993) The retinoblastoma protein as a transcriptional repressor 3, 43–46
Varda Rotter, Orit Foord and Nir Navot (1993) In search of the functions of normal p53 protein 3, 46–49

Organelle biogenesis

David I. Meyer (1991) Protein translocation into the endoplasmic reticulum: a light at the end of the tunnel 1, 154–159
Michael P. Yaffe (1991) Organelle inheritance in the yeast cell cycle 1, 160–164
Paul K. Herman, Jeffrey H. Stack and Scott D. Emr (1992) An essential role for a protein and lipid kinase complex in secretory protein sorting 2, 363–368
Ulrike Kutay, Enno Hartmann and Tom A. Rapoport (1993) A class of membrane proteins with a C-terminal anchor 3, 72–74
Paul B. Lazarow (1993) Genetic approaches to studying peroxisome biogenesis 3, 89–93
Steven M. Theg and Sidney Varian Scott (1993) Protein import into chloroplasts 3, 186–190
Stephen High and Colin J. Stirling (1993) Protein translocation across membranes: common themes in divergent organisms 3, 335–339
Kathleen Wilsbach and Gregory S. Payne (1993) Dynamic retention of TGN membrane proteins in *Saccharomyces cerevisiae* 3, 426–432
Caroline E. Shamu, Jeffery S. Cox and Peter Walter (1994) The unfolded-protein-response pathway in yeast 4, 56–60
Thomas W. Okita, Xingxiang Li and Mark W. Roberts (1994) Targeting of mRNAs to domains of the endoplasmic reticulum 4, 91–96
Larry Gerace and Roland Foisner (1994) Integral membrane proteins and dynamic organization of the nuclear envelope 4, 127–131

Peroxisomes

Paul B. Lazarow (1993) Genetic approaches to studying peroxisome biogenesis 3, 89–93

Plant cell biology

John Gray (1992) New light on green developments 2, 57–58 (MR)
Edward E. Farmer and Clarence A. Ryan (1992) Octadecanoid-derived signals in plants 2, 236–241
William J. Lucas and Shmuel Wolf (1993) Plasmodesmata: the intercellular organelles of green plants 3, 308–315
Noni (V. E.) Franklin-Tong and Chris (F. C. H.) Franklin (1993) Gametophytic self-incompatibility: contrasting mechanisms for *Nicotiana* and *Papaver* 3, 340–345
Sarah E. Wyatt and Nicholas C. Carpita (1993) The plant cytoskeleton–cell-wall continuum 3, 413–417
Gad Galili, Yoram Altschuler and Hanna Levanony (1993) Assembly and transport of seed storage proteins 3, 437–442
Patricia A. Bedinger, Kristine J. Hardeman and Cynthia A. Loukides (1994) Travelling in style: the cell biology of pollen 4, 132–138

Protein degradation

Stefan Jentsch (1992) Ubiquitin-dependent protein degradation: a cellular perspective 2, 98–103
William A. Dunn, Jr (1994) Autophagy and related mechanisms of lysosome-mediated protein degradation 4, 139–143

Protein folding

Ari Helenius, Thorsten Marquardt and Ineke Braakman (1992) The endoplasmic reticulum as a protein-folding compartment 2, 227–231

Mark A. Stamnes, Suzanne L. Rutherford and Charles S. Zuker (1992) Cyclophilins: a new family of proteins involved in intracellular folding 2, 272–276
Françoise G. van der Goot, Jeremy H. Lakey and Franc Pattus (1992) The molten globule intermediate for protein insertion or translocation through membranes 2, 343–348

Protein–protein interactions

Peter Michaely and Vann Bennett (1992) The ANK repeat: a ubiquitous motif involved in macromolecular recognition 2, 127–129
Albertus D. Beyers, Louise L. Spruyt and Alan F. Williams (1992) Multimolecular associations of the T-cell antigen receptor 2, 253–255
Bruce J. Mayer and David Baltimore (1993) Signalling through SH2 and SH3 domains 3, 8–13

Protein structure

Ken C. Holmes, Chris Sander and Alfonso Valencia (1993) A new ATP-binding fold in actin, hexokinase and Hsc70 3, 53–59
Didier Picard (1993) Steroid-binding domains for regulating the functions of heterologous proteins *in cis* 3, 278–280

RNA

Leonard Rome, Nancy Kedersha and Diane Chugani (1991) Unlocking vaults: organelles in search of a function 1, 47–50
Stephen Kearsey and David Kipling (1991) Recombination and RNA processing: a common strand? 1, 110–112
Sherrie R. Tafuri and Alan P. Wolffe (1993) Dual roles for transcription and translation factors in the RNA storage particles of *Xenopus* oocytes 3, 94–98
Giuseppe D'Alessio (1993) New and cryptic biological messages from RNases 3, 106–109
Serafín Piñol-Roma and Gideon Dreyfuss (1993) hnRNP proteins: localization and transport between the nucleus and the cytoplasm 3, 151–155
Alistair J. P. Brown (1993) mRNA translation and turnover: a cellular perspective on their relationship 3, 180–183
Angus I. Lamond and Maria Carmo-Fonseca (1993) The coiled body 3, 198–204
Ulrich Scheer, Marc Thiry and Guy Goessens (1993) Structure, function and assembly of the nucleolus 3, 236–241
Yigong Xing and Jeanne Bentley Lawrence (1993) Nuclear RNA tracks: structural basis for transcription and splicing? 3, 346–353
Hans Mehlin and Bertil Daneholt (1993) The Balbiani ring particle: a model for the assembly and export of RNPs from the nucleus? 3, 443–447
Joseph Kramer, Zuzana Zachar and Paul M. Bingham (1994) Nuclear pre-mRNA metabolism: channels and tracks 4, 35–37
Thomas W. Okita, Xingxiang Li and Mark W. Roberts (1994) Targeting of mRNAs to domains of the endoplasmic reticulum 4, 91–96
Stanislav Fakan (1994) Perichromatin fibrils are *in situ* forms of nascent transcripts 4, 86–90

Secretion

Gabriele Seethaler and Wieland Huttner (1991) Secretory protein sorting, processing and granule biogenesis 1, 35–36 (MR)
Peter Avran and David Castle (1992) Protein sorting and secretion granule formation in regulated secretory cells 2, 327–331
Antony J. O'Sullivan (1993) Good ideas waiting to fuse 3, 26–27 (MR)
Paul L. McNeil (1993) Cellular and molecular adaptations to injurious mechanical stress 3, 302–307
Karl Kuchler (1993) Unusual routes of protein secretion: the easy way out 3, 421–425
Riccardo Fesce, Fabio Grohovaz, Flavia Valtorta and Jacopo Meldolesi (1994) Neurotransmitter release: fusion or 'kiss-and-run'? 4, 1–4
Heiner Niemann, Juan Blasi and Reinhard Jahn (1994) Clostridial neurotoxins: new tools for dissecting exocytosis 4, 179–185

Signal transduction

Ralf Schreck and Patrick A. Baeuerle (1991) A role for oxygen radicals as second messengers 1, 39–42
Richard Kolesnick (1992) Ceramide: a novel second messenger 2, 232–235
Albertus D. Beyers, Louise L. Spruyt and Alan F. Williams (1992) Multimolecular associations of the T-cell antigen receptor 2, 253–255
Manuel Izquierdo and Doreen A. Cantrell (1992) T-cell activation 2, 268–271
Sally J. Leevers and Christopher J. Marshall (1992) MAP kinase regulation – the oncogene connection 2, 283–285
Martin Alexander Schwartz (1992) Transmembrane signalling by integrins 2, 304–307
George Panayotou and Michael D. Waterfield (1992) Phosphatidylinositol 3-kinase: a key enzyme in diverse signalling processes 2, 358–360
Paul K. Herman, Jeffrey H. Stack and Scott D. Emr (1992) An essential role for a protein and lipid kinase complex in secretory protein sorting 2, 363–368
Bruce J. Mayer and David Baltimore (1993) Signalling through SH2 and SH3 domains 3, 8–13
Herbert Y. Lin and Harvey F. Lodish (1993) Receptors for the TGF-β superfamily: multiple polypeptides and serine/threonine kinases 3, 14–19
Olaf Nielsen (1993) Signal transduction during mating and meiosis in *S. pombe* 3, 60–65
Helmut Krämer (1993) Patrilocal cell–cell interactions: sevenless captures its bride 3, 103–105
Jorge Iñiguez-Lluhi, Christiane Kleuss and Alfred G. Gilman (1993) The importance of G protein βγ subunits 3, 230–235
Michael D. Schaller and J. Thomas Parsons (1993) Focal adhesion kinase: an integrin-linked protein tyrosine kinase 3, 258–262
Caroline E. Shamu, Jeffery S. Cox and Peter Walter (1994) The unfolded-protein-response pathway in yeast 4, 56–60
Stanislaw Zolnierowicz and Brian A. Hemmings (1994) Tethering, targeting and triggering of protein phosphatases 4, 61–64 (MR)
Susann M. Brady-Kalnay and Nicholas K. Tonks (1994) Protein tyrosine phosphatases: from structure to function 4, 73–76
Kostas Pantopoulos, Günter Weiss and Matthias W. Hentze (1994) Nitric oxide and the post-transcriptional control of cellular iron traffic 4, 82–86
Susanne R. Keller and Gustav E. Lienhard (1994) Insulin signalling: the role of insulin receptor substrate 1 4, 115–119
David E. James, Robert C. Piper and Jan W. Slot (1994) Insulin stimulation of Glut-4 translocation: a model for regulated recycling 4, 120–126
Joan Massagué, Liliana Attisano and Jeffrey L. Wrana (1994) The TGF-β family and its composite receptors 4, 172–178
Jorge E. Galán (1994) *Salmonella* entry into mammalian cells: different yet converging signal transduction pathways? 4, 196–199

Wouter H. Moolenaar (1994) LPA: a novel lipid mediator with diverse biological actions 4, 213–218
Andrew Ziemiecki, Alisa G. Harpur and Andrew F. Wilks (1994) JAK protein tyrosine kinases: their role in cytokine signalling 4, 207–212
Susan C. Kiley and Susan Jaken (1994) Protein kinase C: interactions and consequences 4, 223–227 (MR)

Telomeres
Lisa L. Sandell and Virginia A. Zakian (1992) Telomeric position effect in yeast 2, 10–14
Eric Gilson, Thierry Laroche and Susan M. Gasser (1993) Telomeres and the functional architecture of the nucleus 3, 128–134

Transcription
M. Lienhard Schmitz, Thomas Henkel and Patrick A. Baeuerle (1991) Proteins controlling the nuclear uptake of NF-κB, REL and dorsal 1, 130–137
Lili Yamasaki and Robert E. Lanford (1992) Nuclear Stephen P. Jackson (1992) Regulating transcription factor activity by phosphorylation 2, 104–108
Kristian Helin and Ed Harlow (1993) The retinoblastoma protein as a transcriptional repressor 3, 43–46
Sherrie R. Tafuri and Alan P. Wolffe (1993) Dual roles for transcription and translation factors in the RNA storage particles of *Xenopus* oocytes 3, 94–98
Serafín Piñol-Roma and Gideon Dreyfuss (1993) hnRNP proteins: localization and transport between the nucleus and the cytoplasm 3, 151–155
Tony Kouzarides (1993) Transcriptional regulation by the retinoblastoma protein 3, 211–213
Charles J. Sherr (1994) The ins and outs of *RB*: coupling gene expression to the cell cycle clock 4, 15–18
Caroline E. Shamu, Jeffery S. Cox and Peter Walter (1994) The unfolded-protein-response pathway in yeast 4, 56–60
Kimberly Burns, Eric A. Atkinson, R. Chris Bleackley and Marek Michalak (1994) Calreticulin: from Ca^{2+} binding to control of gene expression 4, 152–154

Transcytosis
Marian R. Neutra and Jean-Pierre Kraehenbuhl (1992) Transepithelial transport and mucosal defence I: the role of M cells 2, 134–138
Jean-Pierre Kraehenbuhl and Marian R. Neutra (1992) Transepithelial transport and mucosal defence II: secretion of IgA 2, 170–174

Tumour suppressors
Peter J. Bryant (1993) Towards the cellular functions of tumour suppressors – an introduction 3, 31–35
Lora Hedrick, Kathleen R. Cho and Bert Vogelstein (1993) Cell adhesion molecules as tumour suppressors 3, 36–39
Isabelle Rey and Alan Hall (1993) Tumour suppressors and the regulation of GTP-binding protein activity 3, 39–42
Kristian Helin and Ed Harlow (1993) The retinoblastoma protein as a transcriptional repressor 3, 43–46
Varda Rotter, Orit Foord and Nir Navot (1993) In search of the functions of normal p53 protein 3, 46–49
Tony Kouzarides (1993) Transcriptional regulation by the retinoblastoma protein 3, 211–213

Viruses
Peter Staeheli, Fernando Pitossi and Jovan Pavlovic (1993) Mx proteins: GTPases with antiviral activity 3, 268–272
Glen R. Nemerow, David A. Cheresh and Thomas J. Wickham (1994) Adenovirus entry into host cells: a role for α_v integrins 4, 52–55

(MR) meeting report

SUBSCRIBE to *trends in* CELL BIOLOGY

❑ Please enter my subscription to ***trends in*** CELL BIOLOGY
12 monthly issues beginning ..... *(enter month in 1994)*

	The Americas	UK/Row
❑ Personal	❑ $110.00	❑ £69.00
❑ 50% student discount	❑ $55.00	❑ £34.00
❑ Institutional	❑ $490.00	❑ £318.00

Please send proof of student status. Air assisted delivery is fully included.

Total payment ..... (*enter amount*)

Sample Copies
❑ Please send me a free sample copy of
trends in CELL BIOLOGY
❑ Please do not send me information from other companies

Payment
❑ Cheque, Eurocheque or money order made payable to **Elsevier**
❑ Credit Card ❑ Visa/Barclaycard
❑ Mastercard/Access ❑ Am Ex

Expiry Date .....
Card No .....
Signature .....
Total Payment (incl VAT except UK) .....

YOUR ADDRESS DETAILS TC4A06

Name.....
Position .....
Address.....
.....
.....
Zip/Postal Code.....
Country.....
Tel.....
Fax .....
VAT Registration No*.....

*** EC Non UK Customers only (1993 EC Directive).**
Non VAT registered customers must pay VAT. Please add VAT (at your country's rate) to the price. VAT registered customers please provide VAT registration no.

EC countries and VAT equivalents: Belgium: BTW; Denmark: MOMS; France: TVA; Germany: MWST; Greece: FPA; Ireland: VAT; Luxembourg: TAV; Spain: IVA; Netherlands: BTW.

Send to: UK: Elsevier Trends Journals, Circulation Dept, Kidlington, Oxford, UK, OX5 1DX. Tel: +44 (865) 843300 Fax: +44 (865) 843940
USA: Elsevier Trends Journals, 660 White Plains Road, Tarrytown, NY 10591-5153, USA. Tel: (914) 524 9200 Fax: (914)333 2444
AUSTRALIA: Elsevier Trends Journals, Journals Information Office, PO Box 242, Northbridge, NSW 2063. Tel: 61 (02) 958 4429 Fax: 61 (02)·967 2126
E-mail: A.FRICKER@ELSEVIER.CO.UK